MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2015/2016

EEE7316 – ENERGY POLICY, REGULATIONS AND STANDARDS

(MEEE)

JUNE 2016
0.00 a.m – 00.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 4 pages including the cover page with 4 Questions only.

2. Answer **ALL** questions. The distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

Question 1

(a) List out FOUR objectives of Malaysian National Renewable Energy (RE) Policy. [4 Marks]

(b) One of the Strategic Thrusts of National RE Policy is to 'Introduce Legal and Regulatory Framework'. List out FOUR implementation approaches to achieve this Thrust. [4 Marks]

(c) National Renewable Energy and Action Plan (2011) released the Feed-in Tariff (FiT) and annual degression for different RE resources (see Table Q1(c)). Briefly explain why there is a need to have different annual degression for different RE resources and why solar PV has the highest degression. [4 + 4 Marks]

Table Q1(c)

RE Technologies/Resources	FiT Duration	Range of FiT Rates* (RM/kWh) Min-Max	Annual Degression*
Biomass (palm oil, agro-based)	16 years	0.24-0.35	0.2%
Biogas (palm oil, agro-based, farming)	16 years	0.28-0.35	0.2%
Mini-hydro	21 years	0.23-0.24	0%
Solar PV	21 years	1.25-1.75	6%
Solid waste & sewage	21 years	0.3-0.46	1.5%
Wind	21 years	0.23-0.35	1%
Geothermal	21 years	0.28-0.46	1%

(d) Malaysian government has introduced Fiscal Incentives in the RE sector since year 2000 with an expiry date 31st December 2010 which is the end of the ninth Malaysia Plan. Briefly describe the purpose of fiscal incentives, and what have been included in these fiscal incentives. [4+5 Marks]

Question 2

(a) In the Ninth Malaysia Plan (2006-2010), industrial sector is expected to implement measures for improvements in equipment and processes as well as end uses. However, in practice, many barriers hamper the implementation of energy efficiency (EE). List out THREE main barriers. [4 Marks]

(b) In order to address such barriers, mentioned in Part (a), the Government of Malaysia initiated the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP) in 1999. List out TWO outcomes that are expected to be achieved under MIEEIP. [4 Marks]

Continued...

(c) Various components used and added on a single-phase motor are known to improve the efficiency. Provide the list of these components and briefly discuss how they improve the efficiency and how they impact the cost. [9 Marks]

(d) Briefly describe the Life-Cycle Cost (LCC) of equipments and the considerations for the end user to consider on the purchasing of the respective equipments. [4+4 Marks]

Question 3

(a) Below is one of the clauses in *ELECTRICITY SUPPLY ACT 1990, EFFICIENT MANAGEMENT OF ELECTRICAL ENERGY REGULATIONS 2008*. Explain the clause with an example of energy consumption for a typical company.

"any installation which receives electrical energy from a licensee or supply authority with a total electrical energy consumption equal to or exceeding 3,000,000 kWh as measured at one metering point or more over any period not exceeding six consecutive months..."

[7 Marks]

(b) List down the FIVE tasks a company shall do as per requirement by the regulation above. [10 Marks]

(c) A company obtained Green Building Index (GBI) assessment scores as tabulated in Table Q3. State the GBI rating for the company.

Table Q3

Part	Item	Maximum Points	Score
1	Energy Efficiency	35	25
2	Indoor Environmental Quality	21	18
3	Sustainable Site Planning & Management	16	14
4	Material & Resources	11	10
5	Water Efficiency	10	6
6	Innovation	7	4
	Total Score	100	77

[2 Marks]

(d) State THREE cost components and their proportion for a 30 years Life-Cycle Cost (LCC) of a building. [6 Marks]

Question 4

(a) State FOUR purposes of Standard MS 1525: 2014 Malaysian Standard. [9 Marks]

(b) Based on Standard MS 1525: 2014, state at least FOUR important factors that should be considered during passive design of a building. [4 Marks]

Continued...

(c) State TWO methods to provide natural ventilation to a building according to Standard MS 1525: 2014. [2 Marks]

(d) Sketch the typical model for MS ISO 50001, Energy Management System. [5 Marks]

(e) State the purpose of Standard IEC 60034-2.1. [2 Marks]

(f) State THREE standards of high efficient motors provided in IEC 60034-30: 2008. [3 Marks]

End of Paper.